ArcGIS Pro: Mapping and Visualization

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Mapping an Visualization Vision

In ArcGIS Pro

- Improve drawing performance and quality

- Provide an intuitive and efficient map authoring experience in 2D and 3D
  - Creating 2D maps, 3D maps, and layouts
  - Layer symbology including symbol selection and editing
  - Layer properties
  - Labeling

- Support existing maps you have today and extend them with new capabilities
- e.g. procedural modeling

Mapping Overview

What we built

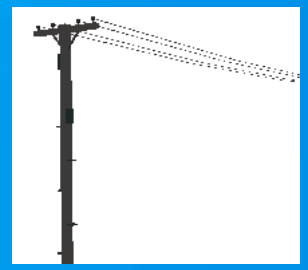
- Unified 2D / 3D mapping experience
- One symbol model integrating 2D, 3D, and representation symbols
- Decoupling maps and layouts
- Modern graphics support
  - Anti-aliasing
  - True transparency support
  - Improved drawing performance and application responsiveness
    - Multi-threaded drawing

High Level Mapping UX Design Goals

- Emphasize your work, not the UI:
- Layer symbology and labeling
  - Provide better support for iterative workflows (e.g. map design)
- Layer properties
  - Provide ability to make changes across many layers
- Provide quick access to commonly changed items but allow deeper changes
- Erase differences between 2D and 3D where appropriate

2D Maps and 3D Maps

- 2D Maps and 3D maps are similar…
  - Have layers, coordinate system, bookmarks…
- …but they usually have different goals
  - Different symbology, including different classification fields (eg: Utility Poles)

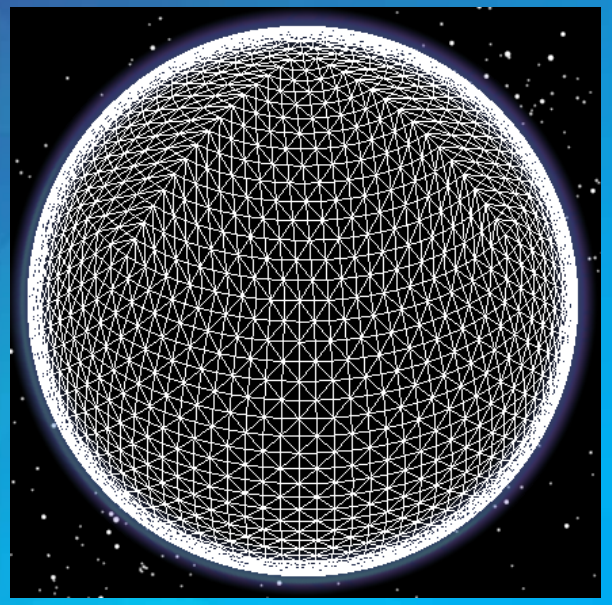


- Some 3D layers aren't useful in 2D
  - Elevation surfaces, Multipatches, Extruded features etc…

Solution: 2 types of maps

- Maps (2D) and Scenes (3D)
  - .MXDs → Maps
  - .SXDs / .3DDs → Scenes in Local or Global view
- You can create new Maps and Scenes
  - Then add in data, set coordinate systems, etc.
- You can convert a Map into a new Scene
  - And vice versa
- You can also:
  - Copy layers between them
  - Re-use Bookmarks between them
  - Link them together for interactive navigation

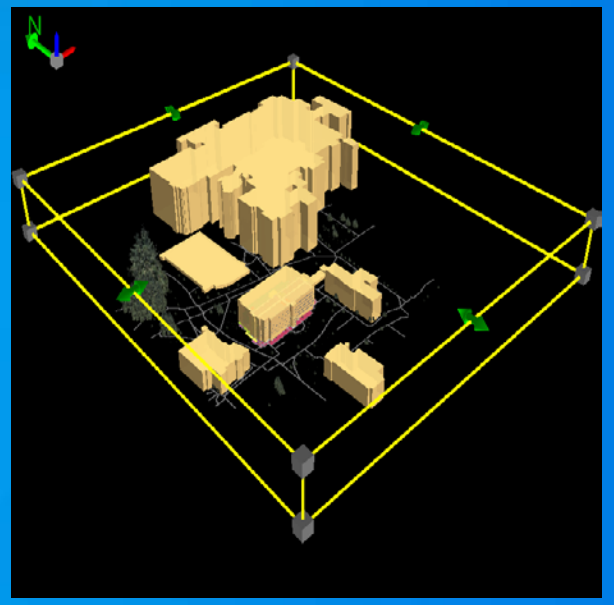
Types of 3D Worlds



ArcGlobe

‘Global’ context

Global Coordinate System (WGS84)
Curvature of the earth
Large Data & Services
Multiple surfaces acting as one



ArcScene

‘Local’ context

Projected Coordinate Systems
Area-of-interest
~~Local data only~~
~~One surface per layer~~

Terminology changes

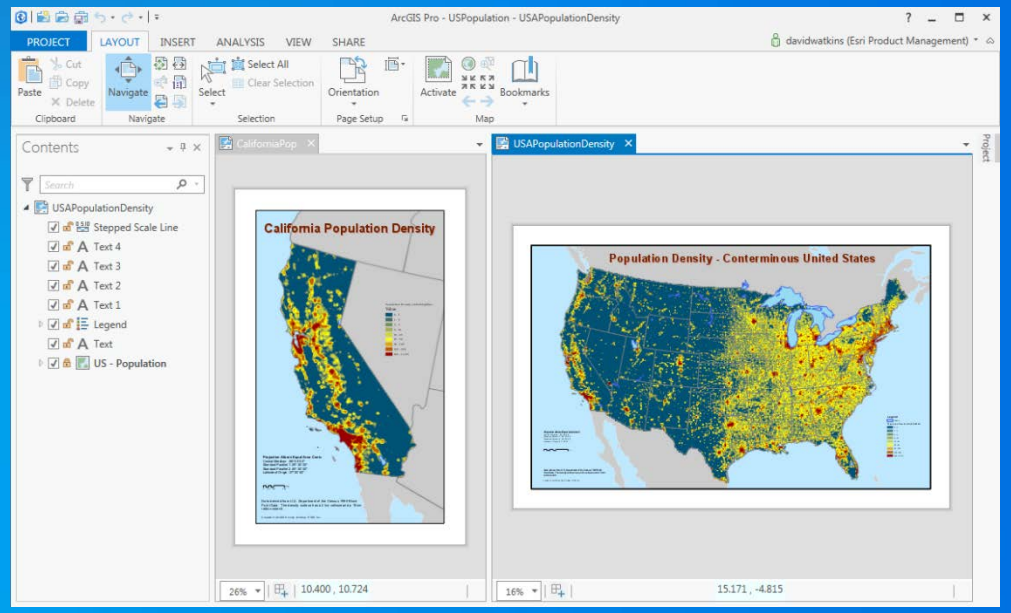
ArcMap name	ArcGIS Pro name
Data frame	Map
Globe	Scene: Global View
Scene	Scene: Local View
Color ramp	Color scheme
Marker symbol	Point symbol
Fill symbol	Polygon symbol
Symbol layer	Symbol layer of type marker, stroke, or fill

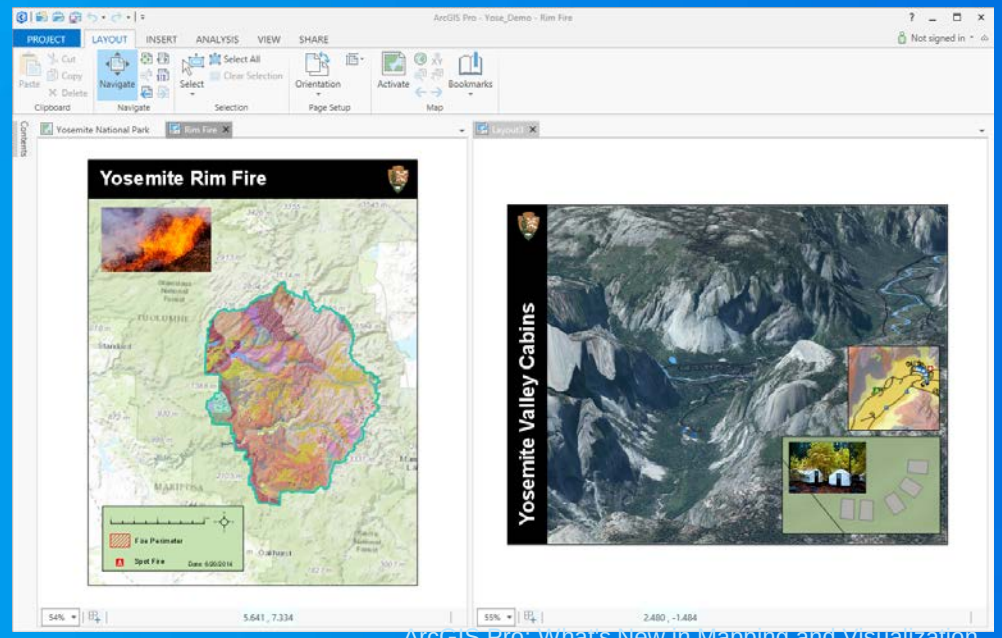
example: Polygon symbol made up of:

- Black stroke symbol layer (outline)
- Green fill symbol layer (interior)

Layout Enhancements

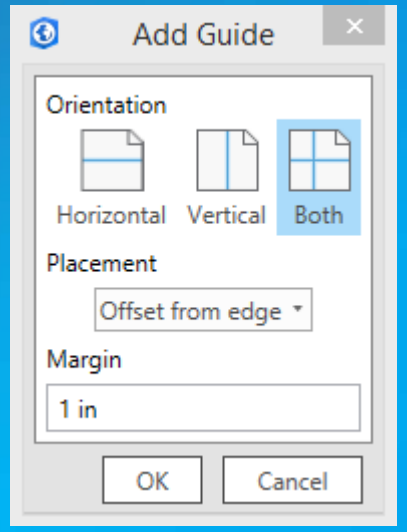
- Multiple layouts
- Scenes (3D maps) in layout
- Layout contents
- Map decoupled from the layout
- Removed printer dependencies

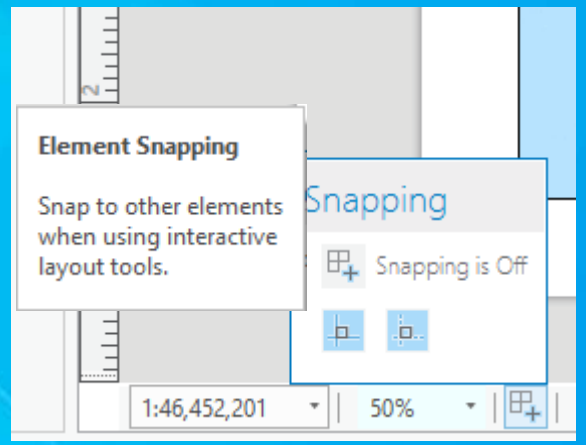


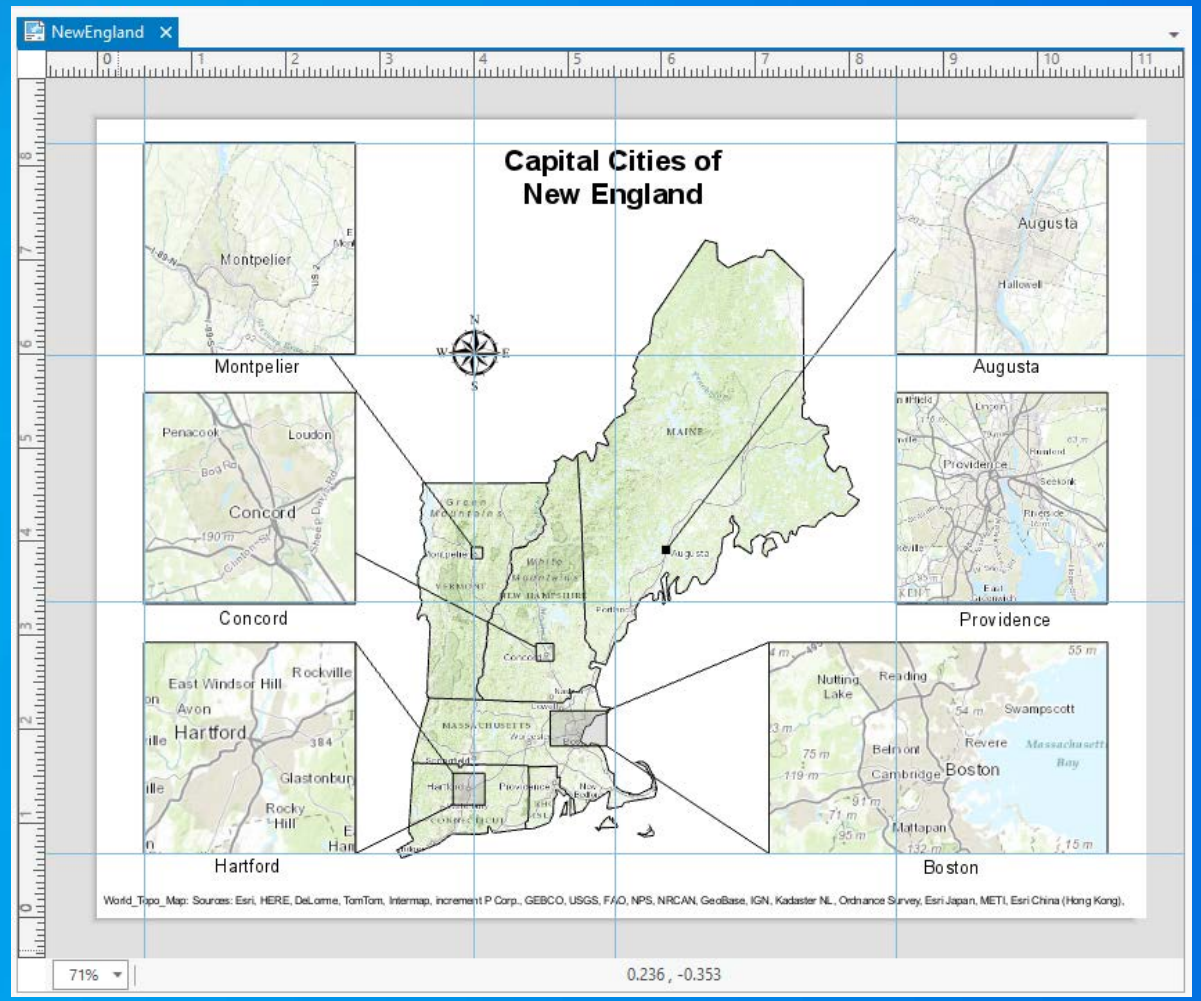


Layout Enhancements (New in 1.1)

- Rulers and Guides
- Layout snapping
- Extent Indicators



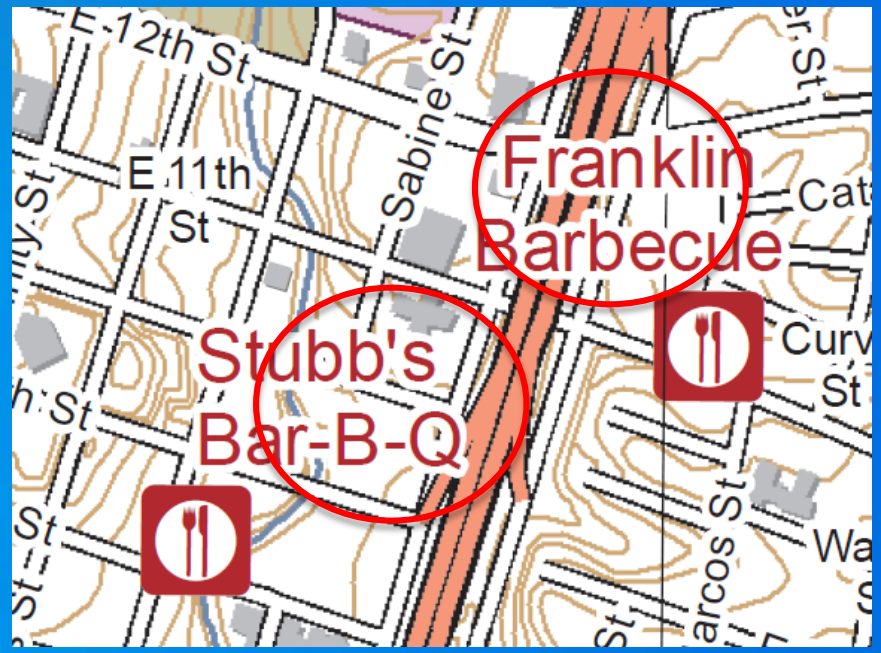




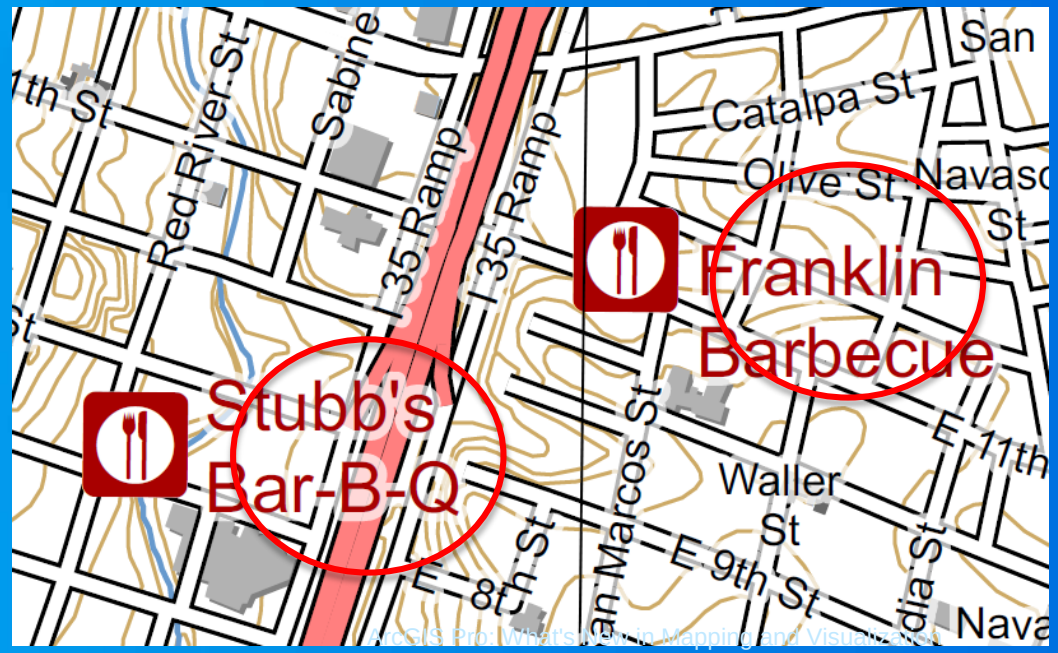
Export Improvements

- Support for transparency in PDF
- Anti-aliasing and improved graphics
- Faster
- Smaller file sizes

ArcMap



ArcGIS Pro



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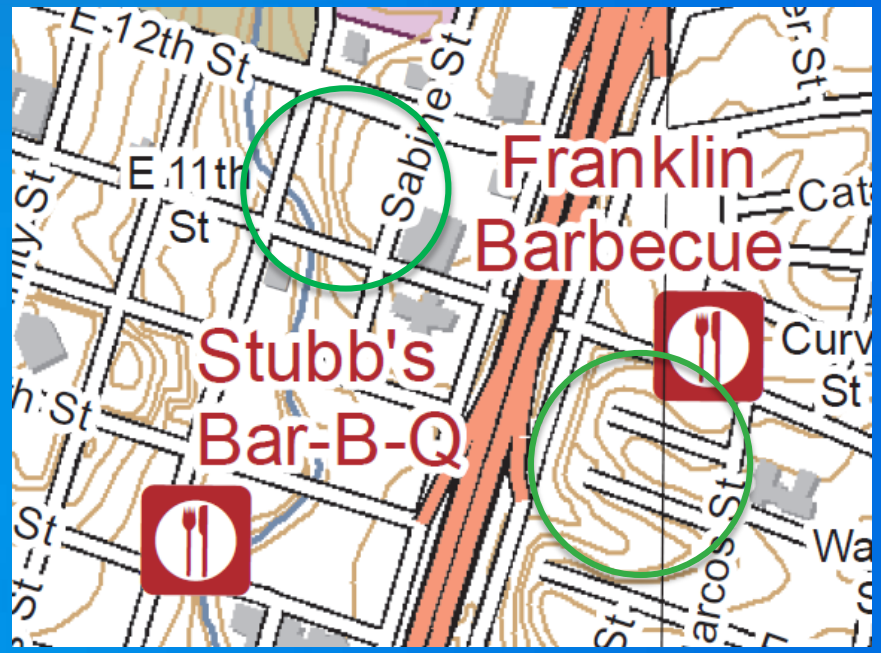
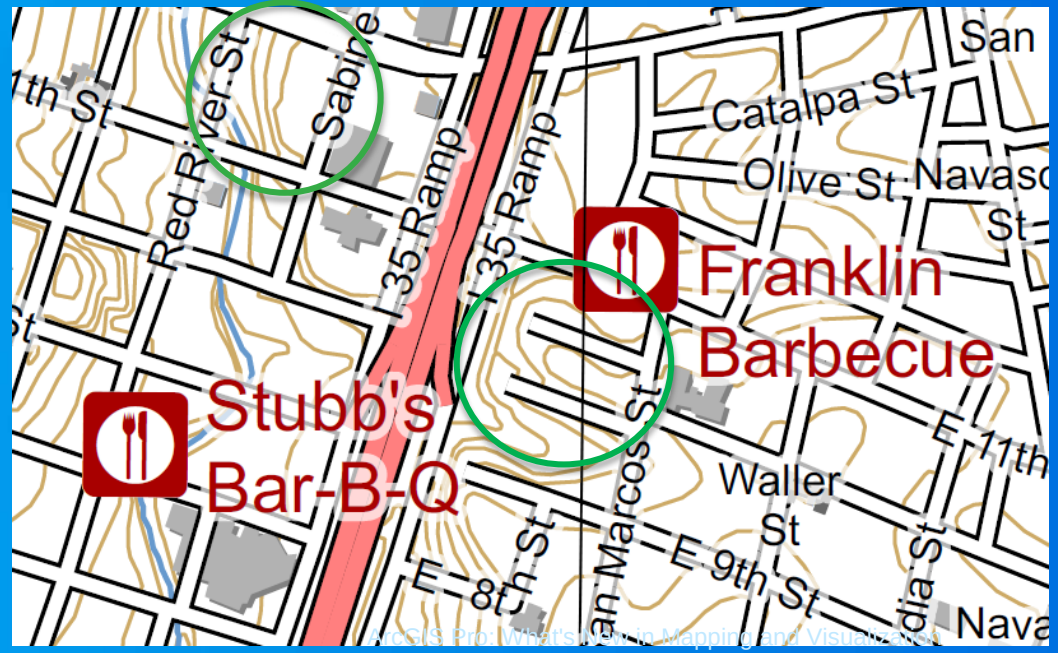


ArcGIS Pro



Map Automation

Provided by arcpy.mp module

- Script redundant mapping workflows
- Create map books
- Update projects, maps and layers (i.e. data sources, symbology)
- Automate the sharing of maps via export or publishing

- Migrate arcpy.mapping scripts to arcpy.mp - what changes?
  - Python 3.4
  - Projects (.aprx)
  - Layer file changes
  - Multiple layouts

Demos

ArcGIS Pro releases

- 1.0 – released in January
- 1.1 – released last week (July 16th)
  - .NET SDK
  - Layout improvements
  - Range slider
  - User experience improvements throughout mapping

- See “Road Ahead” sessions for more information on 1.1 and upcoming releases

Related Presentations

- **ArcGIS Pro: An Introduction**
  - ~~Tuesday 10:15am - 11:30am Ballroom 6A~~
  - ~~Wednesday 10:15am - 11:30am Ballroom 6A~~
  - Thursday 10:15am - 11:30am Ballroom 6A
  - Friday 9:00am - 10:15am Ballroom 6A
- **ArcGIS Pro: Effective License Management**
  - ~~Tuesday 8:30am - 9:45am Ballroom 16B~~
- **ArcGIS Pro: Analysis and Geoprocessing**
  - ~~Tuesday 8:30am - 9:45am Ballroom 6A~~
- **ArcGIS Pro: Editing**
  - ~~Tuesday 1:30pm - 2:45pm Ballroom 6A~~
  - ~~Wednesday 10:15am - 11:30am Ballroom 6F~~
  - Friday 9:00am - 10:15am Room 4
- **ArcGIS Pro: Enterprise Deployment**
  - ~~Tuesday 2:00pm - 2:30pm Tech Theater 15 Exhibit Hall A~~
- **ArcGIS Pro: virtualizing in Citrix XenApp and XenDesktop**
  - ~~Wednesday 12:00pm - 1:00pm Room 2~~
- **ArcGIS Pro: Using Imagery**
  - ~~Wednesday 3:15pm - 4:30pm Room 32 A~~
  - Thursday 3:15pm - 4:30pm Room 14 A
- **ArcGIS Pro and ArcMap: Working Together**
  - Thursday 10:15am - 11:30am Ballroom 20D

Visit us at the Mapping and Visualization island in the Esri Showcase

Thank you…

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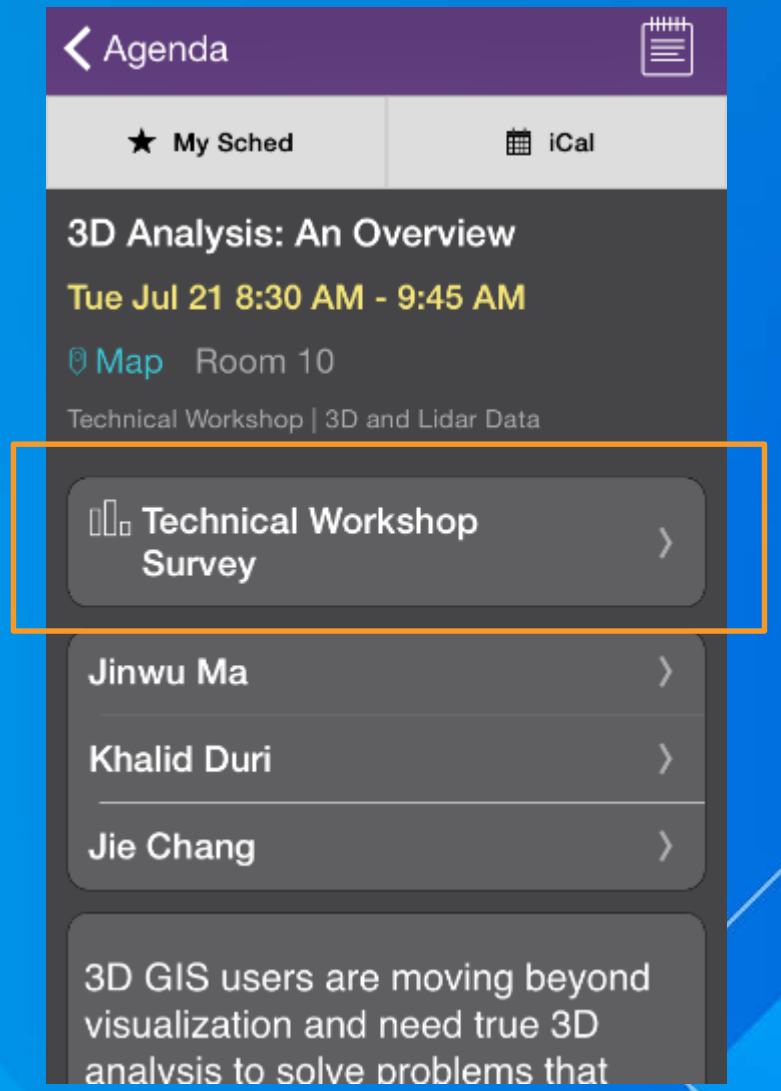
- Select ArcGIS Pro: Mapping and Visualization in the Mobile App
  - Use the Search Feature to quickly find this title
- Click “Technical Workshop Survey”
- Answer a few short questions and enter any comments



Understanding our world.